

# North Star Newsletter

September 2011

Volume XI No. 9

## NHAC General Meeting

August 26, 2011

### NOVICE PROGRAM

*“Our Future in Space”*

by Joe Williams

6:30 - 7:15 in the building CLA Teaching Theater

### MAIN PRESENTATION

Beginning at 7:30 in the building CLA Teaching Theater, featuring:

- NHAC news and announcements
- *“What’s Up Doc?”* by Aaron Clevenson

### FEATURED SPEAKER

Joe Williams, NASA

*“Orbital Mechanics Basics”*



*NASA Aerospace Technologist and  
Special Assistant for Procurement, Mission Operations Directorate*

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The Deadline for submissions for the  
October 2011 newsletter  
is September 15, 2011.





# 2011 NHAC OFFICERS



## 2011 Elected Officers

PRESIDENT

**Bruce Pollard**

*president@astronomyclub.org*

WEBMASTER

**Ed Knapton**

*webmaster@astronomyclub.org*

VICE PRESIDENT

**Aaron Clevenson**

*vicepresident@astronomyclub.org*

ALCOR

**Jim Barbasso**

*alcor@astronomyclub.org*

SECRETARY

**Susan Pollard**

*secretary@astronomyclub.org*

OBSERVATION COMMITTEE CHAIRPERSON

**\*\*open\*\***

*observation@astronomyclub.org*

TREASURER

**Mary Moore**

*treasurer@astronomyclub.org*

MEMBERSHIP COMMITTEE CHAIRPERSON

**Bruce Pollard/Stuart Davenport**

*membership@astronomyclub.org*

EDITOR

**Jamie Martin**

*newsletter@astronomyclub.org*

PROGRAM COMMITTEE CHAIRPERSON

**George Marsden**

*program@astronomyclub.org*

“It is the chiefest point of happiness that a man is willing to be what he is.”  
*Desiderius Erasmus (1466 - 1536)*

### NHAC is a proud member of:



## News and Tidbits

### Astronomy Day is October 8th!

Make plans to attend **Astronomy Day at the Houston Museum of Natural Science's George Observatory in Brazos Bend State Park**. This annual October event is free (you will just need to pay the **state park admission fee**), open to the public and includes activities for all ages. Festivities begin in the afternoon, but this event really comes to life after dark when the stars begin to shine. Dozens of telescopes - including our large research telescopes - will be available to give everyone a chance to enjoy the delights of the night sky, including star clusters, planets and galaxies. Please visit **Astronomy Day website** for more info.

### Upcoming Star Parties

The **Okie-Tex Star Party** will be held September 24 - October 2, 2011 at Camp Billy Joe in the Black Mesa Area of Oklahoma. For more information visit the **Okie-Tex website**.

The 28th Annual **Eldorado Star Party** will be held October 24 - 30, 2011 at the X Bar Ranch Nature Retreat in Eldorado, Texas. For more information and registration go to the **Eldorado website**.

### Got a Favorite Piece of Equipment?

If you have a favorite piece of equipment, a novel way of solving a problem, or a shortcut for making observing easier, bring it to the monthly meeting for the **"Show-And-Tell"** segment. Each presentation should take about 3 - 5 minutes and all ideas are welcome. Please submit your idea to Program Committee Chair, George Marsden at [program@astronomyclub.org](mailto:program@astronomyclub.org) before the next meeting so that he can reserve a spot for your presentation.

### Special Club Rate Magazine Subscriptions

Club rates for personal subscriptions to ASTRONOMY and SKY & TELESCOPE magazines save about 25% over the normal subscription costs. Each magazine has its own procedure to subscribe based upon initiating the order through the club treasurer.

For ASTRONOMY magazine, write your check to NHAC (or pay in cash) for \$34 (or \$60 for 2 years). The Treasurer then validates your membership by writing a club check for the same amount to the magazine and sending them your address. Renewals must also be processed through the club. Please save your renewal documents for this process.

For SKY & TELESCOPE, pay the club \$33 (or \$32.95 if by check). As above, we write a club check to validate your membership and start your subscription. SKY & TELESCOPE renewals are processed directly by the subscriber.

*Be sure to include a clearly printed name and address sheet for any new subscriptions.*



# Observation Sites

## O'Brien Observing Site

Have you been to O'Brien site yet? This is a new location that is available to NHAC members. It has open fields with a treed horizon in all directions at 5 degrees and is located in Montgomery, Texas (heading west on Highway 105)

If you would like to use this site in the future, please read the use policy on the NHAC web page (click on the "Star Party!" link from the Home page), and please follow this process:

- Tim and Wanda O'Brien and their family are our hosts. They are on Netslyder, the email list server.
- To request use of the site, send an email out on Netslyder to: [NHAC@mail.netslyder.net](mailto:NHAC@mail.netslyder.net) (you must already be a member of the Netslyder mailing list)
- Requests must be made more than 24 hours in advance.
- Wanda or Tim will reply on Netslyder to let you know it is ok.
- Other members are welcome to also attend that night. Once approved, another request is not necessary at that point.
- The site is open to members and their guests (only when the member is present).

If you have any questions, please contact Aaron Clevenson, directly, at [aaron@clevenson.org](mailto:aaron@clevenson.org)



# Observation Sites

## White Eagle Lodge (WEL) Monthly Star Parties

### Come on out for Socializing and Stargazing!

Mark these dates on your calendar for future NHAC Star Parties at The White Eagle Lodge (WEL):

August 27, 2011

October 22, 2011

September 24, 2011

November 26, 2011

December 17, 2011

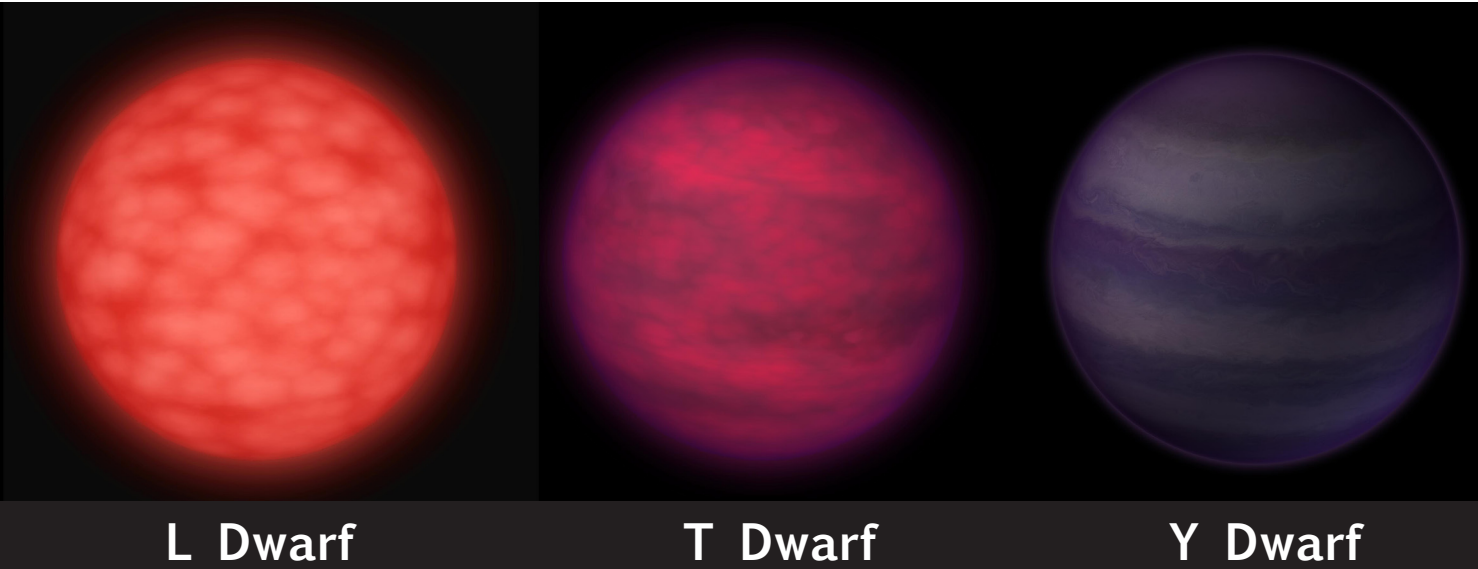
*\*These dates are tentative and subject to change.*

Rules and Directions are available online at [www.astronomyclub.org](http://www.astronomyclub.org).



# NASA's Wise Mission Discovers Coolest Class of Stars

by Whitney Clavin and Trent Perrotto



**L Dwarf**

**T Dwarf**

**Y Dwarf**

*This artist's conception illustrates what brown dwarfs of different types might look like to a hypothetical interstellar traveler who has flown a spaceship to each one. Image Credit: NASA/JPL-Caltech*

PASADENA, Calif. – Scientists using data from NASA's Wide-field Infrared Survey Explorer (WISE) have discovered the coldest class of star-like bodies, with temperatures as cool as the human body.

Astronomers hunted these dark orbs, termed Y dwarfs, for more than a decade without success. When viewed with a visible-light telescope, they are nearly impossible to see. WISE's infrared vision allowed the telescope to finally spot the faint glow of six Y dwarfs relatively close to our sun, within a distance of about 40 light-years.

"WISE scanned the entire sky for these and other objects, and was able to spot their feeble light with its highly sensitive infrared vision," said Jon Morse, Astrophysics Division director at NASA Headquarters in Washington. "They are 5,000 times brighter at the longer infrared wavelengths WISE observed from space than those observable from the ground."

The Y's are the coldest members of the brown dwarf family. Brown dwarfs are sometimes referred to as "failed" stars. They are too low in mass to fuse atoms at their cores and thus don't burn with the fires that keep stars like our sun shining steadily for billions of years. Instead, these objects cool and fade with time, until what little light they do emit is at infrared wavelengths.

Astronomers study brown dwarfs to better understand how stars form, and to understand the atmospheres of planets beyond our solar system. The atmospheres of brown dwarfs are similar to those of gas-giant planets like Jupiter, but they are easier to observe because they are alone in space, away from the blinding light of a parent star.



So far, WISE data have revealed 100 new brown dwarfs. More discoveries are expected as scientists continue to examine the enormous quantity of data from WISE. The telescope performed the most advanced survey of the sky at infrared wavelengths to date, from Jan. 2010 to Feb. 2011, scanning the entire sky about 1.5 times.

Of the 100 brown dwarfs, six are classified as cool Y's. One of the Y dwarfs, called WISE 1828+2650, is the record holder for the coldest brown dwarf, with an estimated atmospheric temperature cooler than room temperature, or less than about 80 degrees Fahrenheit (25 degrees Celsius).

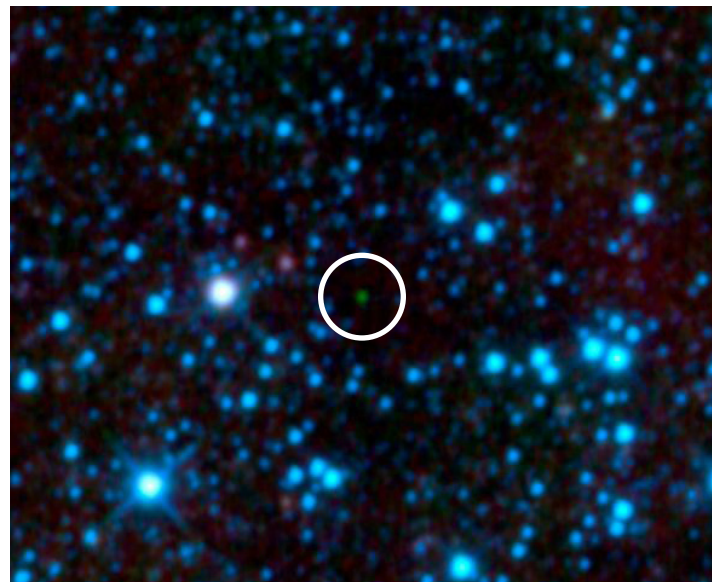
"The brown dwarfs we were turning up before this discovery were more like the temperature of your oven," said Davy Kirkpatrick, a WISE science team member at the Infrared Processing and Analysis Center at the California Institute of Technology in Pasadena, Calif. "With the discovery of Y dwarfs, we've moved out of the kitchen and into the cooler parts of the house."

Kirkpatrick is lead author of a paper appearing in the *Astrophysical Journal Supplement Series*, describing the 100 confirmed brown dwarfs. Michael Cushing, a WISE team member at NASA's Jet Propulsion Laboratory in Pasadena, Calif., is lead author of a paper describing the Y dwarfs in the *Astrophysical Journal*.

The Y dwarfs are in our sun's neighborhood, from approximately nine to 40 light-years away. The Y dwarf approximately nine light-years away, WISE 1541-2250, may become the seventh closest star system, bumping Ross 154 back to eighth. By comparison, the star closest to our solar system, Proxima Centauri, is about four light-years away.

"Finding brown dwarfs near our sun is like discovering there's a hidden house on your block that you didn't know about," Cushing said. "It's thrilling to me to know we've got neighbors out there yet to be discovered. With WISE, we may even find a brown dwarf closer to us than our closest known star."

Once the WISE team identified brown dwarf candidates, they turned to NASA's Spitzer Space Telescope to narrow their list. To definitively confirm them, the WISE team used some of the most powerful telescopes on Earth to split apart the objects' light and look for telltale molecular signatures of water, methane and possibly ammonia. For the very coldest of the new Y dwarfs, the team used NASA's Hubble Space Telescope. The Y dwarfs were identified based on a change in these spectral features compared to other brown dwarfs, indicating they have a lower atmospheric temperature.



*This artist's conception illustrates what brown dwarfs of different types might look like to a hypothetical interstellar traveler who has flown a spaceship to each one. Image Credit: NASA/JPL-Caltech/UCLA*

# The Insperity Observatory at Humble ISD



*The Insperity Observatory at Humble ISD, 2505 S. Houston Ave., Humble, TX 77396 281-641-STAR*

## Upcoming Public Nights at the Observatory\*

September 9, 2011 @ 7:30 pm

October 14, 2011 @ 7:00 pm

November 11, 2011 @ 5:28 am

*\*Dates and times are subject to change.*

# Refreshment Committee Chairman Needed

**Your hungry club members need YOU! Yes, YOU!!**

Have you been thinking about getting more involved with the club, but weren't quite sure what to do? Well, this would be a great way to help out! We are looking for someone to be in charge of the meeting refreshments each month.

Your job would be to see that the refreshments are ordered, picked up and delivered to the meeting each month. They would need to be set up prior to the meeting and taken down after the meeting. You would also need to see that all of the necessary utensils were kept on hand.

As Chairman, you may choose to delegate this monthly, or handle it yourself with a few bodyguards. :)



*Position:* Available immediately

*Salary:* We will pay you on Tuesday for the hamburger today

*Satisfaction:* Priceless

Contact [board@astronomyclub.org](mailto:board@astronomyclub.org)

**We need YOU!!  
Step on up!!**

## About NHAC

The North Houston Astronomy Club (NHAC), was formed for educational and scientific purposes, for people of all races, creeds, ethnic backgrounds and sex, for the primary purpose of developing and implementing programs designed to increase the awareness and knowledge of astronomy, especially for those living near the north side of Houston Texas.

NHAC is a non-profit organization dedicated to providing the opportunity for all individuals to pursue the science of astronomy, by observing in a dark-sky site, learning the latest technology, and sharing their knowledge and experience. Thus, our “Observe-Learn-Share” motto.

*North Houston Astronomy Club is Sponsored by:*



## Membership Benefits

- Loaner telescopes
- Borrow from the NHAC “Library”
- Observe from Dark Sky Observing Sites
- Learn from experienced amateur astronomers
- Share your knowledge at club hosted picnics and star parties
- Discount magazine subscriptions (contact our Treasurer)
- Includes membership in the Astronomical League
- The quarterly Astronomical League magazine “Reflector”
- Eligibility for NHAC Executive Board

[www.astronomyclub.org](http://www.astronomyclub.org)  
[www.nhac.info](http://www.nhac.info)



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Observe - Learn - Share

